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EXAMINER	
TON, THAIAN N	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/821,200	SCHATTEN ET AL.	
	Examiner	Art Unit	
	Thaian N. Ton	1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16,21-23,28-49 and 67-85* is/are pending in the application.

4a) Of the above claim(s) *22,23,28-49 and 67-84* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16, 21 and 85* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicants' Amendment and Remarks, filed 2/12/07, have been considered. Claims 1-16, 21-23, 28-49, 67-85 are pending; claims 17-20, 24-27, 50-66 are cancelled; claim 85 is newly added; claims 1 and 2 are amended; claims 22, 23, 28-49 and 67-84 are withdrawn; claims 1-16, 21 and 85 are under current examination.

Election/Restrictions

Applicant's election with traverse of Group I (claims 1-21, 24-27, 50-66) in the reply filed on 6/1/06 is acknowledged. The requirement is still deemed proper and is therefore made FINAL.

Claims 22, 23, 28-49, 67-84 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 6/1/06.

This application contains claims 22, 23, 28-49, 67-84 drawn to an invention nonelected with traverse in the reply filed on 6/1/06. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761

(CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-16, 21 and 85 stand provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim1, 10, 34-53 of copending Application No. 11/003,006 in view of Campbell (of record).

Applicants argue that the Examiner's reliance of a non-related, non-commonly owned reference in combination with the '006 application (i.e., Campbell *et al.*) is improper, because the MPEP provides no basis for using this type of reference in an obviousness-type double patenting rejection. The Examiner directs Applicants to the flow chart in the MPEP, Chart I-B, "Conflict between two applications." In the instant case, both applications have the same inventive entities, therefore, the Examiner can properly use form paragraphs 8.33 & 8.35 or 8.37. The Examiner notes that form paragraph 8.37 provides guidance to show that a secondary reference may be used to show the non-obviousness using analysis under 35 USC §103. Furthermore, the MPEP states that, "A double patenting rejection of the obviousness-type, if not based on an anticipation rationale, is "analogous to [a failure to meet] the nonobviousness requirement of 35U.S.C. 103" except that the patent principally underlying the double patenting rejection is not considered prior art. Thus, the Examiner has properly applied this rejection, using a secondary reference to show why the '006 application is considered obvious.

Applicants argue that the Examiner has not established a *prima facie* case of obviousness for rejecting the instant claims in view of the co-pending '006 claims

and the Campbell reference. Applicants argue that there is no suggestion to combine the references to arrive at the invention of the '006 case. Applicants argue that the Examiner further has shown no reasonable expectation of success, and therefore has not met the burden under §103.

These arguments have been fully considered, but are not persuasive. The amended claims are now directed to producing a viable primate embryo; the '006 claims are directed to producing a viable embryo, which can then be used to produce a cloned animal. Certain of '006 claims are broader than the instant claims in that they encompass any species of animal; however, specific embodiments of '006 recite that the animal produced is primate. Both sets of claims are directed to addition of the same molecular components during SCNT. Furthermore, the only other difference between the two claim sets is with regard to the type of egg used. The instant claims recite the term "egg" and the '006 claims recite the term "extrusion enucleated egg". The Examiner provided Campbell to show that it would be obvious to use any type of enucleated egg, and particularly, an extrusion-enucleated egg, in the instant claims, to produce a primate embryo. One of skill in the art would have been sufficiently motivated by Campbell's teachings to use any particular means to enucleate the oocytes, to increase the chance of further development of the nuclear transfer embryo. One of skill in the art would have had a reasonable expectation of success with regard to using an enucleated egg, as taught by Campbell, because extrusion-enucleated eggs are commonly used in methods of nuclear transfer. This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 101

The prior rejection of claims 24-27 under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter is rendered moot in view of Applicants' cancellation of the claims.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-16, 21 and 85 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. This rejection is maintained for reasons of record, advanced in the prior Office action, mailed 8/15/06.

Enablement is considered in view of the Wands factors (MPEP 2164.01(A)). These include: nature of the invention, breadth of the claims, guidance of the specification, the existence of working examples, state of the art, predictability of the art and the amount of experimentation necessary. All of the Wands factors have been considered with regard to the instant claims, with the most relevant factors discussed below.

Applicants' Arguments.

1. Applicants argue that the Examiner did not analyze all of the Wands factors, with regard to the level of one of ordinary skill in the art, and because the level of ordinary skill in the art is exceedingly high, this factor would weigh in favor of enablement, and therefore, the entirety of the Examiner's analysis is flawed. See pages 9-10 of the Response. Applicants argue that they have now amended the claims such that specific molecular components, selected from the group consisting of a centrosome protein, a centrosomal component from a sperm centrosome, a mitotic motor protein, and combinations thereof, into an enucleated egg to produce a viable primate embryo.

2. Applicants argue that the Examiner's previous position does not reflect the correct nature of the invention, and thus, re-evaluation is required. See page 10, 1st ¶ of the Response. Applicants argue that the breadth of the claims were not considered in light of the specification, and that Applicants argue that the Examiner is "required to identify the subject matter that was considered to be enabled". Applicants argue that the breadth of the now-amended claims are now enabled, because the specification provides specific guidance for producing a viable primate embryo, when introducing one or more molecular components into an enucleated egg in methods of nuclear transfer. See pages 10-11 of the Response.

3. Applicants argue that the claims as now amended are directed to adding specific molecular components that have been found to be deficient in enucleated eggs, and Applicants argue that the post-filing art of Zhou *et al.* who concluded that "[t]he NuMA turbulence associated with disordered chromosome organization that was found in some SCNT-produced embryos in this study was consistent with development failure." Thus, Applicants argue that the specification provides sufficient guidance to enable the claimed invention. See page 11 of the Response.

Response to Arguments. These arguments have been considered, but are not persuasive for the following reasons:

1. The Examiner contends that all the Wands factors were analyzed in determination of the lack of enablement of the claimed invention, as is clear on page 5 of the prior Office action. The Examiner provided the analysis of the most relevant factors in the body of the rejection, but the level of ordinary skill in the art has been considered. Although one of ordinary skill in the art would have a high level of skill, this does not provide enablement for the claimed invention as a whole, as evidenced by the rejection as a whole. The Examiner provides further analysis with regard to the as-amended claims in the body of this rejection.

2. The breadth of the claims has now been amended such that specific molecular components are introduced into an enucleated egg, in methods of nuclear transfer, to produce a viable primate embryo. However, the recitation of these components fails to provide specific guidance to enable the claimed invention for reasons of record. In particular, the specification provides the observation that primate embryos had faulty mitotic spindles, but there is no guidance in the specification to show which (if any) of the claimed molecular components, or which combination(s) of these components would produce a viable primate embryo. The Examiner has not provided a scope of enablement, because the claimed invention is fully not enabled, as evidenced by analysis in the prior Office action.

3. Applicants have not provided the post-filing art of Zhou *et al.*, therefore this reference is not of record; therefore, the Examiner has not considered this reference.

Applicants' Arguments. With regard to Applicants' comments on various references (see page 12 of the Response) applied in the prior Office action, the Examiner notes that certain of the references no longer apply to the claims as amended. In particular, the various unpredictibilities with regard to cloning of any species of animal is rendered moot in view of Applicants' claim amendments, which now specify the production of a viable *primate embryo.* The Examiner responds to Applicants' remarks as they apply to the as-amended claims.

Response to Arguments. The amended claims are directed to the production of a viable primate embryo. The specification teaches that an embryo is a developing cell mass that has not implanted in the uterine membrane of a maternal host (p. 8, ¶ 32). Although the specification provides no specific definition for a "viable primate embryo", it appears that the only contemplated uses for the embryos that are produced by the claimed methods are either for the production viable, cloned primates, or to use the viable embryos to produce embryonic stem cells (see, for example, p. 14, ¶55). The specification teaches that spindle organization and

accurate segregation of chromosomes are required for the production of viable primate embryos, as evidenced by the non-viability of embryos prepared by NT that lack structural or motile molecules form the sperm centrosomes (see p. 11, ¶46). Thus, although the claims now recite the production of a viable primate embryo, the only contemplated uses for these viable embryos are in either the production of embryonic stem cells, or the production of viable primates. Therefore, the prior art of record (*e.g.*, Oback, Campbell *et al.* Tian *et al.*, and Li *et al.*) are pertinent to the claimed invention with regard to the unpredictability in using any donor cell in methods of nuclear transfer, to produce a cloned primate. These references provide the state of the art of nuclear transfer, in a general sense, with regard to the unpredictability in producing viable, cloned animals. Although they do not provide specific guidance with regard to the production of primate embryos, the Examiner has provided the art of record (Chen, *et al.* and Ng *et al.*).

It is further noted that the Examiner does not address the contemplated use of the embryo with regard to the production of ES cells, because Applicants did not elect this invention (see Election, 6/1/06, of Group I, directed to producing a cloned animal). Thus, the claims are extent they read on the elected invention.

Applicants' Arguments. Applicants argue that the Ng reference (of record) states that the NT embryos were capable of spindle formation, and that the Examiner concluded that NT non-human primates are capable of spindle formation. Applicants argue that, however, this paper confirms that 85.2% of the somatic cell chromosomes do not condense into normal PCC spindles within 2 hours of injection, and that the Examiner provides no evidence that the authors of this reference evaluated the cells for the presence or absence of appropriate levels of molecular components, as presently contemplated by the claimed invention. See pages 12-13 of the Response.

Response to Arguments. These arguments have been fully considered, but are not persuasive. The claimed invention is directed to nuclear transfer to produce

a viable primate embryo, by introducing a nucleus with specific molecular components into an enucleated egg. The specification provides no specific guidance as to what combination(s) of the recited molecular components would be sufficient to produce a viable primate embryo, as required by the claims. With regard to the Ng reference, the Examiner responds that the as-filed disclosure clearly teaches that there is a direct correlation between reproduction and the ability to assemble mitotic spindles (see p. 11, ¶45), and that it is observed that primate embryos prepared by NT have mitotic spindle defects. Therefore, the Ng reference clearly shows that primate embryos, produced by NT, are capable of spindle formation. It is not relevant whether they evaluated their cells for the presence or absence of the appropriate levels of molecular components, because the fact that spindle formation is observed shows that appropriate molecular components are present to produce the spindle. As Ng further suggest that the developmental failure in primate NT could be caused by, for example, incomplete nuclear reprogramming. This is further supported by Chen *et al.* (of record), See page 1, Introduction, col. 1-2.

Applicants' Arguments. Applicants argue that there would be no undue experimentation in order to determine what parameters would be required to arrive at the production of primate embryos. Applicants argue that Simerly (2004, of record) provide this evidence that production of primate embryos by NT are routine and reliable, and thus. Applicants argue that even if production of primate embryos were not routine and reliable in some instances, one of ordinary skill in the art would recognize that experimentation could be required before successfully practicing the described invention. See page 13 of the Response.

Response to Arguments. These arguments have been considered but are not persuasive. Firstly, the Simerly is directed to a different scope than that which is instantly claimed, their work is directed to non primate SCNT (see p. 238, 2nd col., 1st full ¶), they further teach that human SCNT claims are now considered hoaxes (see p. 238, 1st ¶, last sentence). In particular, the Simerly article states that the

obstacles of nonhuman primate SCNT resulted from the extraction of the metaphase-II spindle chromosome complex during enucleation, and that using alternative procedures for SCNT, including extrusion versus extraction of the metaphase-II spindle chromosome complex prior to metaphase II arrest, for example, appeared to overcome some of these difficulties. See p. 238, 2nd col., 1st full ¶. Thus, the Simerly article is supported by the Chen and Ng references, who clearly show that non-human primate embryos are capable spindle formation. There is no indication by any reference of record that the claimed invention would predictably result in the production of a viable primate embryo, as required by the claims. Simerly teaches that embryo transfer of the SCNT-NHP did not result in "convincing evidence of pregnancies after 30 days post ET". Abstract. Furthermore, Applicants' citation of Simerly's statement that production of cloned primate embryos can be produced "routinely and reliably" is not within the scope of Applicants' invention, because the protocol used in the Simerly reference (*i.e.*, the various alternative protocols for SCNT) are not within the scope the instantly claimed invention. Simerly does not provide enablement to the claimed invention because the invention is based upon the observation that reconstituted primate oocytes do not form a functional bipolar protein and speculation that addition of specific molecular components would allow the production of a viable primate embryo. In particular, the specification teaches that the primate embryos had faulty mitotic spindles, particularly with regard to a defective NT mitotic spindle with misaligned chromosomes centrosomal NuMA at meiosis. The claimed invention is not enabled because the specification provides no guidance with regard to which of the molecular components that are instantly claimed (a centrosome protein, a centrosomal component from a sperm centrosome, a mitotic motor protein), or specific combinations of these components that would result in a viable primate embryo. The observation that the primate embryos produced by SCNT do not form functional spindles, or that the centrosomes are missing NuMA and HSET

kinsein do not provide guidance to show that addition of these proteins would correct the defect. In fact, the post filing art shows that addition of these components is not required to show spindle formation. See Chen, Ng, and Simerly, who all show spindle formation in primate embryos.

Applicants' Arguments. Applicants argue that the Examiner has failed to "specifically address" the *Wands* factor of the level of one of ordinary skill in the art, and thus, the prior analysis was incorrect. Applicants argue that in the field of SCNT, the level of one of ordinary skill in the art is exceedingly high, and thus, one of skill in the art would have a high degree of knowledge regarding the techniques and considerations to be used and taken when performing experiments relating to the teachings of the present application. Applicants argue that the claimed invention is fully enabled, and that the production of primate embryos using SCNT is "routine and reliable". See page 14 of the Response.

Response to Arguments. These arguments have been fully considered, but are not persuasive. The Examiner notes, as above, that the level of one of ordinary skill in the art, as well as all *Wands* factors were considered in this rejection. It is reiterated that the production of viable primate embryos, as required by the claims, are not found to be routine and reliable, with specific regard to the instantly claimed invention. See above. The art of record clearly shows the unpredictability in SCNT in primates. MPEP 2164.03 states that,

> The amount of guidance or direction needed to enable the invention is inversely related to the amount of knowledge in the state of the art as well as the predictability in the art. In re Fisher, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970). The "amount of guidance or direction" refers to that information in the application, as originally filed, that teaches exactly how to make or use the invention. The more that is known in the prior art about the nature of the invention, how to make, and how to use the invention, and the more predictable the art is, the less information needs to be explicitly stated in the specification. In contrast, if little is known in the prior art about the nature of the invention and the art is unpredictable, the specification would need

more detail as to how to make and use the invention in order to be enabling.

Thus, in the instant case, the specification provides no specific guidance with regard to how to make and use the claimed invention. In particular, the specification teaches the absence of specific molecular components and the observation that SCNT-produced primate embryos had faulty mitotic spindles, with regard to a specific component, NuMA. The specification provides no guidance to show that the addition of these factors would result in a viable primate embryo; furthermore, the post-filing art of Ng and Chen show that NT primate embryos are capable of spindle formation, and yet would not still be considered "viable", as required by the claims.

Finally, the Examiner notes that Applicants' have amended the claims with regard to the production of a viable primate embryo, but the method steps of the claims do not relate to the sole production of a primate embryo. In particular, the method steps in claim 1 are broader in scope than the resultant primate embryo. The specification provides no specific guidance with regard to the production of primate embryos utilizing nuclei or eggs from non-primate sources in methods of SCNT. It is suggested that the method steps be amended to reflect that the nuclear donor and recipient egg be from a primate species.

Accordingly, in view of the state of the art of NT, particularly with regard to the unpredictability of donor cells and recipient cells to be used, where the state of the art only supports specific cell types with regard to successful NT, the state of the art of primate NT, wherein art at the time of filing shows that improper spindle formation is perhaps not the only cause for developmental arrest of primate NT embryos, the post-filing art that shows that primate NT remains unpredictable, the lack of teachings or guidance provided by the specification, with regard to the one or more molecular components that would be added to the nuclei to produce a viable embryo, it would have required undue experimentation, for one of skill in the art, to

determine the parameters, cell types, molecular components necessary to achieve successful SCNT, as broadly claimed.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-16, 21 and 85 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This is a new ground of rejection, necessitated by Applicants' Amendments to the claims.

Claim 1 is unclear for the following reasons: the method steps of the claims fail to relate to the final step of the claim, the production of a viable primate embryo. In order to produce a primate embryo by nuclear transfer, a primate cell nucleus, and a primate enucleated oocyte would be required. There is no recitation of this in the method steps; therefore the scope of the steps is broader than the resultant product (the primate embryo). Appropriate correction is required. Claims 2-16, 21 and 85 depend from claim 1.

Claim Rejections - 35 USC § 102

The prior rejection of claims 1-5, 21, 24, 50-54 and 66 under 35 U.S.C. 102(b as being anticipated by Schnieke *et al.* is withdrawn

The prior rejection of claims 1-5, 7, 21, 24, 50-54, 56, 66 under 35 U.S.C. 102(b) as being anticipated by Strelchenko *et al. is* withdrawn.

The prior rejection of claims 1-5, 7, 13, 21, 24, 50-54, 62, 66 under 35 U.S.C. 102(a) or alternatively, under 35 U.S.C. 102(e) as being anticipated by Collas *et al.* is withdrawn.

These rejections are withdrawn in view of Applicants' amendment to the claims, which now require specific molecular components, and the production of a primate embryo.

The prior rejection of claims 24, 25 and 27 under 35 U.S.C. 102(b) as being anticipated by Vanderzwalmen *et al.* is rendered moot in view of Applicants' cancellation of the claims.

The prior rejection of claims 24-26 under 35 U.S.C. 102(b) as being anticipated by Thomson is rendered moot in view of Applicants' cancellation of the claims.

Conclusion

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Thaian N. Ton whose telephone number is (571) 272-0736. The Examiner can normally be reached on Monday through Thursday from 7:00 to 5:00 (Eastern Standard Time). Should the Examiner be unavailable, inquiries should be directed to Peter Paras, SPE of Art Unit 1632, at (571) 272-4517. Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the Official Fax at (571) 273-8300. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

thaian ton

THAIAN N. TON
PATENT EXAMINER